WHAT IS CLAIMED IS:

1. An active matrix liquid crystal display panel for producing visual images, comprising:

a first substrate structure including a black matrix defining openings, color filter layers respectively disposed in said openings and a piece of material inserted between said black matrix and said color filter layers and larger in resistivity than said black matrix and said color filter layers;

a second substrate structure including electrodes for selectively generating local electric fields in regions associated with said color filter layers; and

a liquid crystal layer filling a gap between said first substrate structure and said second substrate structure, and having pieces of liquid crystal in said regions for changing values of transparency depending upon the local electric fields.

2. The active matrix liquid crystal display panel as set forth in claim 1, in which said first substrate structure further includes an overcoat layer partially covering said black matrix and said color filter layers and partially serving as said piece of material.

3. The active matrix liquid crystal display panel as set forth in claim 2, in which the resistivity of said color filter layers is greater than the resistivity of said black matrix and less than the resistivity of said overcoat layer.

4. The active matrix liquid crystal display panel as set forth in claim 3, in which said resistivity of said black matrix is fallen within a range between $10^3$ ohm-cm to $10^6$ ohm-cm, the resistivity of said color filter layers is fallen

within a range between $10^8$ ohm-cm to $10^{12}$ ohm-cm, and the resistivity of said overcoat layer is equal to or greater than $10^{14}$ ohm-cm.

5. The active matrix liquid crystal display panel as set forth in claim 2, in which moats are formed in the part of said overcoat layer in such a manner as to be filled with said liquid crystal.

6. The active matrix liquid crystal display panel as set forth in claim 5, in which the resistivity of said color filter layers is greater than the resistivity of said black matrix and less than the resistivity of said overcoat layer, and the resistivity of said liquid crystal is greater than the resistivity of said overcoat layer.

7. The active matrix liquid crystal display panel as set forth in claim 1, in which said first substrate structure further includes an overcoat layer covering said black matrix, said color filter layers and said piece of material, and said piece of material is different from said overcoat layer.

8. The active matrix liquid crystal display panel as set forth in claim 7, in which the resistivity of said color filter layers is greater than the resistivity of said black matrix and less than the resistivity of said piece of material and the resistivity of said overcoat layer.

9. The active matrix liquid crystal display panel as set forth in claim 8, in which said resistivity of said black matrix is fallen within a range between $10^3$ ohm-cm to $10^6$ ohm-cm, the resistivity of said color filter layers is fallen within a range between $10^8$ ohm-cm to $10^{12}$ ohm-cm, the resistivity of said

piece of material is equal to or greater than $10^{14}$ ohm-cm, and the resistivity of said overcoat layer is equal to or greater than $10^{14}$ ohm-cm.

10. The active matrix liquid crystal display panel as set forth in claim 7, in which said piece of material has first portions in said gap between said black matrix and said color filter layers, second portions on the peripheral portions of said black matrix and third portions on the peripheral portions of said color filter layers.

11. The active matrix liquid crystal display panel as set forth in claim 7, in which said piece of material has first portions in said gap between said black matrix and said color filter layers, second portions on the peripheral portions of said black matrix and third portions overlaid by peripheral portions of said color filter layers.

12. The active matrix liquid crystal display panel as set forth in claim 7, in which exposed surfaces of said black matrix are covered with said piece of material.

13. The active matrix liquid crystal display panel as set forth in claim 1, in which said second substrate structure further includes a non-transparent layer opposing the gap between said black matrix and said color filter layers so as to stop leakage light passing through said gap.

14. The active matrix liquid crystal display panel as set forth in claim 13, in which said non-transparent layer is selected portions of a common electrode serving as selected ones of said electrodes together with pixel electrodes.

15. A process for fabricating an active matrix liquid crystal display panel, comprising the steps of:

a) preparing a first substrate structure including a black matrix defining openings, color filter layers respectively disposed in said openings and a piece of material inserted between said black matrix and said color filter layers and larger in resistivity than said black matrix and said color filter layers and a second substrate structure including electrodes for generating local electric fields;

b) assembling said first substrate structure and said second substrate structure together so that a gap takes place therebetween;

c) injecting liquid crystal into said gap; and

d) completing said active matrix liquid crystal display panel.

15. The process as set forth in claim 14, in which said step a) includes the sub-steps of

a-1) patterning a first material layer into said black matrix,

a-2) patterning a second material layer into said color filter layers in such a manner that said black matrix is spaced from said color filter layers, and

a-3) covering said black matrix and said color filter layers with an overcoat layer so that a part of said overcoat layer penetrates into the gap between said black matrix and said color filter layers for serving as said piece of material.

16. The process as set forth in claim 15, in which said step a) further includes the sub-step of a-4) forming moats in said part of said overcoat layer.

17. The process as set forth in claim 15, in which said step a) includes the sub-steps of

a-1) patterning a first material layer into said black matrix,

a-2) patterning a second material layer into said color filter layers in such a manner that said black matrix is spaced from said color filter layers,

a-3) pattering a third material layer into said piece of material filling the gap between said black matrix and said color filter layers, and

a-4) coating said black matrix, said color filter layers and said piece of material with an overcoat layer.

18. The process as set forth in claim 15, in which said step a) includes the sub-steps of

a-1) pattering a first material layer into said black matrix having openings,

a-2) forming said piece of material in such a manner as to partially on peripheral regions of said black matrix and partially in peripheral zones of said openings,

a-3) forming a second material layer into said color filter layers in such a manner as to have peripheral portions on the portions of said piece of material in said peripheral zones, and

a-4) covering said black matrix, said color filter layers and said piece of material with an overcoat layer.